ORIGINAL

Before the

FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of Petition of Small Aircraft Manufacturers Association (SAMA) For amendment of Part 87 of the Commission's Rules to authorize channels in the 136-137 MHz band for digital Flight Information Services (FIS).

RM 9376

COMMENTS

Aeronautical Radio, Inc. (ARINC), by its attorneys, pursuant to Section 1.405(a) of the Commission's Rules, hereby comments on the petition for rulemaking submitted by the Small Aircraft Manufacturers Association (SAMA) on September 14, 1998.[1] In response thereto, the following is shown:

ARINC is the communications company of the air transport industry. For almost seventy years, the Commission and civil aviation have entrusted it with the management of aeronautical communications resources. ARINC and U.S. civil aviation are directly concerned with the

[1] Public Notice of the SAMA Petition was given October 14, 1998 (Report No. 2301).

effective and efficient use of the scarce radio spectrum available for aeronautical communications in the United States.

SAMA, in its Petition, has requested the FCC to set aside four 25 kHz channels in the aeronautical advisory service for the establishment of a digital flight information service (FIS) to support general aviation. These four channels would logically come out of the fifteen channels assigned in the band 136-136.475 MHz for "general aviation uses such as AWOS, ATIS, control tower and advisory communications" or possibly from the five channels in this band held in reserve for future general aviation use.[2] The technical characteristics of a digital FIS are currently being defined by RTCA in its SC-169 activity, which is drafting Minimum Aviation System Performance Standards (MASPS) for a broadcast digital FIS. The technical characteristics developed by RTCA should be the basis for any changes to the FCC's Rules that may be required to accommodate the digital FIS. Currently under consideration is a broadcast form of VHF Data Link (VDL) Mode 2 that will provide a 31.5 kbit data stream in a 25 kHz channel. This system would use differential 8-phase shift keying (D8PSK) modulation and have a 14K0G1D emission designation.

Prior to making such an allocation, the FCC should consider a number of important issues. First, should a separate service be created? The service could be implemented in the fifteen general aviation channels in the band 136-136.475 MHz simply by adding the 14K0G1D

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[2] Amendment of Parts 2 and 87, 5 FCC Rcd 3954, 3957 (1990), *recon. denied*, 6 FCC Rcd 2291 (1991). Pursuant to footnote US 244, the FAA is permitted to share fifteen non-government channels in the band 136-136.475 MHz "for air traffic control purposes, such as automatic weather observation services (AWOS), automatic terminal information services (ATIS) and airport control tower communications." 47 C.F.R. § 2.106 US 244.

emission to this band. This would be consistent with the request of SAMA that this service be within the aeronautical advisory service.[3]

Second, how much spectrum should be provided for this service? While RTCA has looked into relative spectral efficiencies of different techniques of providing data to general aviation aircraft, it has not made a detailed study of what the traffic load will be and how many channels can be justified for such a system.[4] ARINC is concerned that, with the limited frequency resources available to aviation for this type of service, an unnecessarily large commitment of channels for a specific new service would prevent the use of these frequencies for other important safety services. Thus, in making provision for digital FIS, additional information must be provided to justify the number of frequencies sought and provisions made to recapture the channels should the amount designated be more than actually needed.

ARINC urges caution in creating new radio services because the limited spectrum for current aeronautical safety applications is nearing exhaustion. At present, ARINC has 6740 frequency assignments on the 148 channels available in the aeronautical enroute service; this is more than 45 assignments per channel. Given the large distances over which these air to ground/ground to air assignments can interfere with each other, ARINC has been required to make carefully coordinated assignments of channels.

The need for spectrum for existing voice communications applications will continue to grow; however, the fastest growing segment of aeronautical communications is data. ARINC

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[3] SAMA Petition at 3.

[4] *See* RTCA, Operational Concepts for Data Link Applications of Flight Information Services (RTCA/DO-232, March 14, 1996) at 46-47.

pioneered aeronautical mobile data communications with its ACARS system, first implemented in 1977. The use of air-ground-air data communications is growing at a rate of more than 15% per year, and additional nationwide aeronautical enroute frequencies are required for this important service. For a number of years, ARINC has been developing, and securing the necessary international consensus for a new higher speed data system, known as VDL Mode 2. ARINC is currently planning a transition to VDL Mode 2 to help meet the growing need for operational control data communications. Because of the investment of the industry in ACARS technology, however, ACARS will also continue to operate for some time into the future during the transition.

Moreover, ARINC must ensure that adequate spectrum is available in the aeronautical enroute service for the additional traffic that will be generated by the Federal Aviation Administration (FAA) during its transition to an FAA datalink system. The FAA Policy Statement dated May 1, 1998, confirms that the FAA will "use VHF Data Link (VDL) Mode 2 capability for non-time-critical data link messaging and subsequently to transition to VDL Mode 3 ...."[5]

Third, are there other bands that might be appropriate for this service? It is possible that frequencies for this new service could be found in the 112-118 MHz band. This band is used for important radionavigation services under the management of the FAA. However, it may be that four 25 kHz channels could be spared from this band.

Fourth, public correspondence should be explicitly banned from the service. As currently conceived, a basic FIS will be provided to general aviation at no cost to the user and no cost to

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[5] SAMA Petition, Att. at 2.

the federal government.[6] In order to recoup the cost of operating the system, however, the service or content provider will provide encoded value-added operational control information, which a user can decode on a subscription basis. Such a system would be permitted by the FCC's Rules. However, the FCC should make it clear that the value-added services must be related to the operational control of aircraft in the airspace, and not concern personal messages or paging services. Such public correspondence would overwhelm the service, and impair the important safety service. There simply is not enough spectrum available in the VHF aeronautical communications band to meet the needs for public correspondence.

Finally, the SAMA Petition implies that the FAA should assign the frequencies for this service.[7] The entire 136-137 MHz band is non-government spectrum,[8] access to which is provided by the FCC. Government use of these frequencies is governed by the IRAC Frequency Manual, which provides that:[9]

> A Government frequency assignment may be authorized in a non-Government band, as an exception, provided a) the assignment is coordinated with the FCC and b) no harmful interference will be caused to the service rendered by non-Government stations, present or future.

FAA use of this band is limited to the fifteen channels currently allocated for general aviation purposes by footnote US 244. Even so, the use of these fifteen channels must be

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6 SAMA Petition, Att. at 1-2.

7 *Id.* at 2, Att. at 1.

8 *See* 47 C.F.R § 2.106; *accord* IRAC, Manual of Regulations and Procedures for Federal Radio Frequency Management ¶ 4.1.3 ("IRAC Frequency Manual").

9 IRAC Frequency Manual ¶ 4.1.2.

coordinated with the FCC because the FAA shares these channels with the private sector. The FCC, in the rulemaking, should consider what assignment criteria it will use to ensure that the spectrum is used efficiently, especially if the FCC determines to release any of the five reserve general aviation channels. The FAA/IRAC would be responsible for assigning the frequencies only if the FAA were to retain sufficient control over the use and operation of the FIS stations so that they could be regarded as government stations.[10] This degree of FAA involvement is probably not contemplated in this new service.

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[10] *See id.* ¶ 8.2.17.

In conclusion, ARINC believes it is appropriate at this time for the FCC to consider whether the public interest would be served by the establishment of a separate FIS service within the Aviation Service rules, and if so, what regulations should be adopted. If the assignment of frequencies is found to be in the public interest, then the required channels should come from fifteen frequencies currently allocated for general aviation support or from the five channels held in reserve by the FCC for general aviation purposes in the band 136-136.475 MHz, or perhaps the 112-118 MHz band. The technical characteristics adopted should conform with the MASPS developed by RTCA in its SC-169 activity. Finally, public correspondence should be explicitly banned from the new service.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this 13th day of November, 1998, I caused copies of the foregoing Comments to be mailed via first-class postage prepaid mail to the following:

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